

MONGAYT, I.L.; KULAKOV, Ye.A.; ISHKHANOVA, Ye.B.; VANDYUK, N.V.

Biological purification of waste water from synthetic fiber plants.
Ochis. stoch. vod. no.3:154-166 '62. (MIRA 16:5)
(Industrial wastes—Purification)

ISHKHANYAN, S. G.

"Data on the History, Occurrence, Clinical Course and Epidemiology of Leprosy." Sub 30 Oct 51, Central Inst for the Advanced Training of Physicians.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55.

ISHKHANYAN, S.G.; BAYRAMALIBEYLI, I.T.

Comparative evaluation of the results of combined sulfonotherapy
in Azerbaijanian leprosarium. Azerb.med.shur. no.3:58-60 M^r '60.
(MIRA 13:6)

(SULFONAMIDES--THERAPEUTIC USE)

(LEPROSY)

ISHKHNELI, A.K.

Def. at
Tbilisi State U.

И. И. ИСАЕВ

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И. И. ИСАЕВ

Documentation for degree of

Candidate of Physical-Mathematical Sciences

117 AND 118 INDEX		119 AND 120 INDEX	
PROCESSES AND PROPERTIES INDEX			
<p>BC</p> <p>Analysis of gas mixtures by determination of density by the gas balance method. P. Z. Durno and I. P. Luchina (Soviet Lab., 1968, 5, 1972-1973).—Known methods are described. R. T.</p> <p>The system oxygen-liquid oxygen, and explosions in rectification plants. I. P. Luchina, P. Z. Durno, and A. G. Pashirovskaya (J. Chem. Ind. Russ. Sect. 1968, 44, 804-808).—The solubility of O_2 in liquid O_2 is determined at -185° by the O_2 gas passing through ammoniacal $AgNO_3$ in 50% solution. Cryst. O_2 separates from $AgNO_3$ in 50% solution, and may be removed by centrifugation; the Cl_{O_2} of the filtrate is high enough to render explosion possible, but the pressure developed during the explosion is not great enough to destroy the equipment. R. T.</p>			
12-1			
ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION			
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107 AND 108 OTHERS

ABSTRACTS AND REFERENCES INDEX

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651

COMMON ELEMENTS		PROCESSES AND PROPERTY INDEX		COMMON ELEMENTS	
		<i>CR</i>		<i>24</i>	
<p>The temperature of the walls of vaporizers for liquid oxygen and their explosion. I. P. Jabloin and P. Z. Boris. <i>Astrogonom Delo</i> 10, No. 7, 21-4(1938); <i>Chem. Zvez.</i> 1940, 1, 2850.—Rupture of steel built up as vaporizers for liquid O₂ may occur as the result of sudden evaporation which produces a rapid increase in pressure and a molten drop in temp. with a consequent embrittlement of the metal at low temps. (-120 to -161°). The effect is similar to percussion. Aside from the embrittlement of the metal, the chief cause of rupture is the presence of defects in the material in the form of inclusions or a coarse-grained structure.</p> <p style="text-align: right;">M. G. Moore</p>					
ASTM A56 METALLURGICAL LITERATURE CLASSIFICATION		BETTER COPY			
100000 #2		100000 #17 ONLY Q21		100000 #17 ONLY Q21	
100000 #2		100000 #17 ONLY Q21		100000 #17 ONLY Q21	

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Ishir

Solubility of solid acetylene and carbon dioxide in liquid oxygen, nitrogen and oxygen-nitrogen mixtures. I. P. Ishir and P. Z. Burbo, *J. Phys. Chem.* (U. S. S. R.) 13, 1337-8 (1939).—Exptl. data given in 2 figures and tables show that the solubilities of solid C_2H_2 and CO_2 in boiling liquid O and N and their mixts. at temps. from 77.4 to 90.0°K. obey the linear relation $\log N = -(A/T) - B$ with $A = 50.70$, $B = 4.56404$ for C_2H_2 and $A = 141.18$, $B = 2.77016$ for CO_2 . F. H. Rathmann

ASS-5LA METALLURGICAL LITERATURE CLASSIFICATION

621181/941

18

Conditions for the simultaneous preparation of technically pure oxygen and nitrogen from air. M. B. Kal'manovich and L. P. Ishkin. *J. Chem. Ind. (U. S. S. R.)* 16, No. 9, 15-16 (1960).--The operation of an app. with 2 rectifying columns is described, and the points at which fractions rich in A must be withdrawn, to give almost complete sepa. of O and N, are discussed.

H. M. Leicester

CA

7. Obtaining krypton concentration in air fractionation apparatus. A. I. Dmitrieva, I. P. Ishkin and M. B. Kal'manovich. *J. Chem. Ind. (U.S.S.R.)* 17, No. 4-5, 45-8 (1960).—App. contg. a special column for rectifying the O fraction from air is described. In this app., 60-70% of the Kr can be removed from the O as a Kr-Xe concentrate.

H. M. Leicester

ALPHABETIC INDEX																									
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
<p><i>ca</i></p> <p>Prevention of explosions in the air-separating apparatus. P. Z. Burbo and J. P. Ishkin. <i>Antogenez</i> 1941, No. 1, 23-5; <i>Khem. Razval. Zhur.</i> 4, No. 7-8, 128 (1941). Explosions of air-sep. app. are due to the presence of C_2H_2 in the liquid O. An absorption method for the purification of O from C_2H_2 has been developed; SiO_2 gel is used as the absorbing agent. The method for connecting the absorbers to the air-sep. column is described in detail. The SiO_2 gel satd. with C_2H_2 is non-explosive in the presence of liquid O. W. N. Hren</p>																									
ALPHABETIC INDEX																									
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<p>NEW S.A. METALLURGICAL LITERATURE CLASSIFICATION</p>																									
ALPHABETIC INDEX																									
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

1654. LOW PRESSURE PLANT OF CLARK FIRM FOR PRODUCTION OF GASEOUS OXYGEN. Reshetnikov, N. P. and Ishkin, B. P. (Kislород (Oxygen), 1946, vol. 3, (5), 26-34; abstr. in Chem. Zentr., 1948, vol. 1, 1096, and in Chem. Abstr., 1950, vol. 44, 9641).

The semi-portable equipment described uses a cold cycle operating between pressures of 5.5 and 7.0 atms.

ASB-514 METALLURGICAL LITERATURE CLASSIFICATION

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CA

Method for the prevention of explosions in apparatus for the separation of air (into its components). I. P. Izhkin and P. S. Burtas. *Kislovod 4*, No. 3, 21-24(1977); *Chem. Zvesti.* 1979, 721.—A new method is reported for the removal of C_2H_2 from the air. The method is based upon a study of the system C_2H_2 -liquid O_2 , of the dynamics of the adsorption of C_2H_2 from O_2 - N_2 mixts., and the explosibility of the adsorbent (silica gel). The CO_2 and moisture-free air passes through a preheater and a spiral coil and then through a throttle valve into the 1st column. The volatile fractions obtained in this column are passed into the 2nd column where, as usual, the N_2 is lead off through a N_2 throttle valve. The liquid from the evaporator, which is a soln. of C_2H_2 in O_2 and N_2 , is led from below through an adsorber contg. silica gel. The C_2H_2 -free liquid passes through the O_2 throttle valve into the 2nd rectifying column. Expts. with the silica gel indicated that explosions occurring during work with C_2H_2 were due to a decompos. of the C_2H_2 in the gas phase when present in a mixt. with O_2 . M. G. M.

ISHKIN, I. P., Engineer

"Distribution of Argon in an Oxygen-Argon Separating Apparatus and a Method for Intensifying the Process of Its Production." Sub 16 Apr 47, Moscow Order of Lenin Chemico-technological Institute C.I. Mendeleev.

Dissertations presented for degrees in science and engineering in Moscow in 1947

SO: Sum No. 457, 18 Apr 55

ISHKIN, I.P.

Burbo, P.Z. and Ishkin, I.P. "Drying air with silica gel," Kislod, 1948, No. 5, p. 1-10 - Bibliog: 10 items

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

ISHKIN, I. P.

ISHKIN, I. P. and SEREBRYANSHAYA, B. I. "Expand the production of compressors and flasks for the oxygen industry", (First portion), Kislod, 1948, No. 6, P. 1-4.

SO: U-3042, 11 March 53, ("etopis'Zhurnal 'nykh Statey, No.7 1949).

ISHKIN, I. P.

ISHKIN, I. P. and SEREBRYANSKAYA, B. I. "Cold losses in vessels to preserve and transport liquid oxygen", Kislorod, 1948, No. 6, p. 16-22.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No.7 1949).

CA

The distribution of pores according to size in porous bodies. — I. P. Ibbin and M. O. Kanner (Inst. Oxygen Mech. Eng., Moscow), *Zh. Fiz. Khim.*, 26, 943-26 (1950). — The conditions for motion of 2 systems (more or less inert, liquids or gas and liquid) through a porous medium were established. The system gas/liquid was studied experimentally and theoretically. The method for detg. the distribution of pores according to size in porous bodies was improved; the pressure and rate of flow of gas through a porous body immersed in a liquid were measured. The method was used for the construction of the structural curves for cemented porous bodies with a pore radius of from 10 to several hundred microns. The distribution according to size agrees with the Maxwell distribution equation.

Paul W. Howerton

USSR/Physics - Thermodynamics

Nov 52

PA 2367100
"Thermodynamic Analysis of Irreversible Low-Temperature Processes. II. Analysis of Individual Irreversible Processes in Low-Temperature Technology," I. P. Ishkin and V. M. Brodianskiy

"Zhur Tekh Fiz" Vol 22, No 11, pp 1783-1793

Authors derive formulas for computation of the coefficients of thermodynamic reversibility and elasticity, concepts of which were introduced in Part I. On the basis of these two new coefficients,

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the authors make subject analysis and point out the possibility of a general method for analyzing all processes in refrigerator and thermal installations. Indebted to Prof A. A. Gukhman.

2367100

Iskander, A. A.

Dissertation: "Protection of the Air Fractionation Apparatus From Acetylene." Dr
Tech Sci, Moscow Chemicotechnological Inst, Moscow, 1953. (Referativnyy Zhurnal--
Khimiya, Moscow No 5, Mar 54)

SO: SUM 243, 19 Oct 1954

1953-54 Soviet Chemical Technology in SI Periodicals.

Ishkin, I.P.

USSR/Statistical Physics - Thermodynamics.

D-3

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11433

Author : Ishkin, I.P., Kaganer, N.G.

Inst :

Title : Investigation of Thermodynamic Properties of Air and Nitrogen at Low Temperatures Under Pressure. I. Determination of the Isothermal Throttle Effect of Air and Nitrogen.

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 10, 2329-2337

Abstract : Description of a setup for the determination of the isothermal throttle effect of gases; the isothermal throttle effect of air and nitrogen was determined in a temperature range from 30 to -183°C at pressures from 1.5 to 50 atmos. The magnitude of the effect of the air and of the nitrogen diminishes with increasing pressure at temperatures above -50°C , and increases at temperatures less than -50°C . The magnitude of the isothermal throttle effect of saturated vapor passes through a minimum

Card 1/2

ISHKIN, I.P.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1563
 AUTHOR ISKIN, I.P., KAGANER, M.G.
 TITLE The Investigation of the Thermodynamic Properties of Air and Nitrogen at Low Temperatures under Pressure.
 II. The Thermodynamic State Diagrams of Air and Nitrogen.
 PERIODICAL Zhurn.techn.fis, 26, fasc.10, 2338-2347 (1956)
 Issued: 11 / 1956

On the basis of the experimental results described by part I (Zhurn.techn.fis, 26, 2329 (1956)) the thermodynamic parameters and the thermodynamic state diagrams of air and oxygen are determined. These diagrams are supposed to be more accurate than those previously published. In the course of the construction of these diagrams the following additional data were used: saturation pressure, heat capacity of the liquid, evaporation heat, thermal capacity of the gas at infinitely low pressure. Next, the formulae used here for the computation of the following thermodynamic parameters are given: enthalpy, entropy, and specific volume. In the present work the pressure ranges were extended up to pressures of 200 atm. Measuring results of the differential and of the integral adiabatic throttle effect of air are in sufficiently good agreement at pressures of more than 50 - 60 atm. For the computation of the thermodynamic parameters and for the construction of the diagrams the data obtained by H. HAUSEN, Forschungsarb. a. d. Geb. Ingenieurwes. H. 274 (1926) were used. Deviations and necessary corrections are mentioned.

USSR/Physical Chemistry - Thermodynamics, Thermochemistry, B-8
Equilibria, Physical-Chemical Analysis, Phase Transitions.

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 330

composition within the temperature range from 26 to -140° and under pressures up to 48 abs at that the divergence of values of the isothermal choking effects from additive values is positive at a high temperature and under low pressure and it is negative at a low temperature and a high pressure. The thermodynamical properties of Ar were computed and graphs were plotted on co-ordinates enthalpy - temperature, temperature - entropy and pV/RT - pressure.

Card 2/2

AUTHORS: Ishkin, I.P., Doctor of Technical Sciences
Katina, N.F., Engineer - Consultants 67-58-3-16/18

TITLE: Technical Consultation (Tekhnicheskaya konsul'tatsiya)
Reply to Readers' Questions (Otvety chitatelyam)

PERIODICAL: Kislorod, 1958, Vol. 11, Nr 3, pp. 45-45 (USSR)

ABSTRACT: To Tov. Boltenkov:
Question: Is it possible, in the case of the permanent absence of acetylene in the liquid of the vaporizer and in liquid oxygen, to reduce the prescribed analyses undertaken for the purpose of determining acetylene to a minimum, e.g. to carry it out only once in one day, and to continue working in accordance with instructions only if the presence of acetylene has actually been established? This question is raised in connection with the fact that the oxygen station concerned is located in a high mountainous region where the air is always pure and acetylene could never be found to be present in the apparatus in the course of the analyses carried out in accordance with instructions in the course of two years.
Card 1/2 Answer: Independent of the fact whether acetylene was found to

Technical Consultation. Reply to Readers' Questions

67-58-3-16/18

be contained in the evaporation liquid or in the liquid oxygen or not, control analyses must be carried out in accordance with instructions. In consideration of special local conditions, your chief engineer may order the working instructions to be modified to the extent he may deem opportune under the given circumstances.

1. Acetylene--Determination
2. Oxygen--Production

Card 2/2

AUTHORS: Ishkin, I. P., Doctor of Technical Sciences, SOV/67-58-4-18/29
Katina, N. F., Engineer

TITLE: Reply to Readers (1) (Chtvety chitatelyam)

PERIODICAL: Kislorod, 1958, Nr 4, p. 42 (USSR)

ABSTRACT: To: Ibragimov and Munasypova of Begovat, Tashkentakaya Oblast'.
Question: Is absorption of acetylene from the air on the solid caustic on the drying block possible?
Answer: Investigations of this problem carried out by the VNIKIIMash" (All-Union Scientific Research Institute for the Construction of Oxygen Machines) showed that such an absorption cannot be found to occur in the case of an acetylene content in the air of up to 0,2 cm³/m³.
Question: What precautions must be taken in connection with oxygen condensers? Answer: As starting, e.g. in the case of the apparatus KG-30, takes 18-24 hours, and as in the case of existing working conditions the presence of acetylene gas in air is quite possible, it is possible that solid acetylene forms in the lower column of the apparatus during starting, which may cause an explosion. It is therefore expedient to see to it that reliably pure

Card 1/4

Reply to Readers (1)

SOV/67-58-L-18/29

air is conveyed through the pipes from outside. These pipelines can also be fitted with acetylene-absorbers.

Question: Where are apparatus for the determination of acetylene (in air) available ? Answer: Such a device can be made according to drawings and descriptions available from VNIIKMash.

Question: Is it necessary to take the correction with respect to the loss of acetylene when determined by the condensation-colorimetric method into account ? Answer: This is not necessary because errors remain within permissible limits.

Question: Must the colorimetrization scales be submitted for confirmation to the chief engineer ? Answer: Colorimetrization scales for the determination of acetylene content can be worked out by any laboratory, but they must be confirmed by the head of the laboratory.

Question: Why is it not possible to determine the acetylene content in the liquid of the vaporizer by analysis in spite of the fact that at the same time considerable quantities of acetylene are found to be contained in the condenser ? Answer: With the 0,5 l test it is possible to determine the acetylene content if its

Card 2/4

Reply to Readers (1)

SOV/67-58-4-18/29

concentration is not less than $0.009 \text{ cm}^3/\text{l}$. In the case of a lower concentration it may not be possible to determine it, but it may accumulate in the liquid oxygen in the condenser.

Question: What method should be employed for the purpose of determining acetylene in air? Answer: The method mentioned in "Vestnik Instituta fizicheskoy khimii AN USSR" (Reports of the Institute of Physical Chemistry, AS Ukr SSR), 1956, Vol. 13, pp. 147-151 must be employed.

Question: Is it possible to carry out a control-examination of the unused remnants of the lye solution by means of the potentiometric method? Answer: There exist more simple methods as e.g. the method of titration (in HCl).

Question: What are the last constructional changes carried out with respect to the oxygen plant KG-30? Answer: The production of such plants was stopped in 1955. Instead, new oxygen plants of the type KGN-30 are now being built by the I. Moscow Autogenous Plant and the Odessa Plant for the building of autogenous machines.

Card 3/4

Reply to Readers (1)

SOV/67-58-4-18/29

1. Acetylenes 2. Oxygen 3. Colorimetry

Card 4/4

AUTHORS: Ishkin, I. P., Doctor of Technical Sciences, SOV/67-58-1-24/29
Katina, N. P., Engineer

TITLE: Reply to Readers (7) (Otvety chitatel'nyam)

PERIODICAL: Kislorod, 1958, . . . Nr 4. p. 44-44 (USSR)

ABSTRACT: To: A. G. Apostolov of Nikolayev, Oblast'.
Question: Is it possible to regenerate a lye solution which was saturated with carbon dioxide from the air in the course of operation? Answer: In chemical works regeneration of this kind is carried out with the solution of calcium hydroxide. In view of working conditions at oxygen stations this is not done because such a process would be unprofitable with respect to the small quantities concerned.
Question: What kind of leather is used for the purpose of making sleeves for piston rods? Answer: For this purpose chromed leather (in accordance with GOST 1898-48), which is specially prepared, is used. The leather is saturated with synthetic wax having a dissolution heat of 82-88° or with a mixture of hydrocarbon having a dissolution heat of 56-60°. Saturation is carried out at 95°. The sleeve is then punched in a hot condition and

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Reply to Readers (7)

SOV/67-58-4-24/29

left in the punch until cooled.

1. Sodium hydroxide--Regeneration 2. Potassium hydroxide--
Regeneration 3. Leather--Applications 4. Leather--
Properties

Card 2/2

SOV/24-58-5-7/31

AUTHORS: Brodyanskiy, V. M. and ~~Ishkin, I. P.~~ (Moscow)

TITLE: Thermodynamic Analysis of Irreversible Processes in Refrigerating Plants (Termodinamicheskiy analiz neobratimyykh protsessov v kholodil'nykh ustanovkakh)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 5, pp 40-45 (USSR)

ABSTRACT: Losses due to irreversibility in refrigerating plants are normally analysed by comparison of actual cycles with the Carnot cycle. Assessment of the thermodynamic efficiency of the cycle demands complicated constructions. A simple graphical method of determining the thermodynamic coefficients of various cooling cycles is outlined which is based on earlier work of the authors. Schematic diagrams outline three systems:

1. An air compressor and air expansion turbine cycle.
2. A conventional vapour compression and expansion valve system.
3. An absorption system.

Under each diagram is a linear representation of the heat and work quantities introduced and taken out of the cycle by the individual elements of the cycle. Heat or

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SOV/24-58-5-7/31

Thermodynamic Analysis of Irreversible Processes in Refrigerating Plants

work put into the system at each unit is represented by an appropriate length of line running from left to right, and heat or work taken out of the system by lines running from right to left immediately below the input lines. For simplification insulation losses are ignored. This linear representation of heat or work input and output at the various units of the system reappears as the central abscissa of a coordinate plot of energy quantities, of which, Fig.4, p.42, is typical; it gives the $Q - K_t$ diagram for an air expansion cooling system. The ordinate in the diagram is a quantity $K_t = 1 - T_0/T$ where T_0 is the temperature of the medium surrounding the system and T is the temperature of the working substance at different points in the cycle and virtual temperature in relation to work. When $K_t = 1$, $T = \infty$ when $K_t = 0$, $T = 293^\circ K$ (i.e. T_0) and when $T = 0^\circ K$, $K_t = -\infty$ (corresponding to an infinite amount of work). In Fig.4 the large rectangular area bounded by $K_t = 1$ at the top and L_1 on the abscissa is proportional to

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SOV/24-58-5-7/31

Thermodynamic Analysis of Irreversible Processes in Refrigerating Plants

the amount of energy put in by the compressor. The area bound by the curve below the abscissa and the heat quantity Q_4 is proportional to the energy entering the system through the evaporator (i.e. the heat taken out of the body being cooled). These areas are considered as positive. The smaller rectangular area bounded by $K_t = 1$ at the top and L_2 on the abscissa is proportional to the energy expended in the expansion turbine, and the fourth area bounded by the curve above the abscissa and the heat quantity Q_3 is proportional to the energy taken out of the system by the cooler (i.e. a heat exchanger between the compressor and the expansion turbine). These two latter areas are considered as negative. The difference between the positive areas and the negative areas is proportional to the "external" loss due to irreversibility in the cycle. The ratio between the negative quantities and the positive quantities gives a "coefficient of thermodynamic reversibility" for the actual cycle. The full lines and the dotted lines in the diagram indicate the temperature level of the working substance, and that of the cooling medium (in the case of the cooler curve) or that of the body being

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SOV/24-58-5-7/31

Thermodynamic Analysis of Irreversible Processes in Refrigerating Plants

cooled (in the case of the evaporator curve). The shaded area between the full and dotted lines represents an "external" irreversible loss in the system through imperfect heat transfer. The ratio of the area below the abscissa, representing the heat energy entering the system at the evaporator (i.e. heat taken out of the cooled body), to the area representing work energy put into the system by the compressor, gives the so-called "coefficient of thermodynamic reversibility of cooling". The advantage of this method of representation is that it enables direct evaluation to be made of these "coefficients of thermodynamic reversibility". The usual $T - Q$ diagram gives areas whose algebraic sum is always equal to zero. The coefficients obtained by this method are an immediate measure of the efficiency of the cooling cycle. Further diagrams are given which detail the losses due to "external" irreversibility in the evaporator element of the cooling cycle. These are plotted on a similar co-ordinate system for various conditions of heat exchange, cross-flow, counterflow, etc. Minimum loss occurs where the cooled body changes

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SOV/24-58-5-7/31

Thermodynamic Analysis of Irreversible Processes in Refrigerating Plants

its temperature, spatially, at the same rate as the working substance. The analysis concludes with observations on "internal" irreversibility due to the "energy mass" of the various elements of the cycle. (cf. thermal mass and inertia). Attention is drawn to the importance of attaining good efficiencies in the units where the "energy mass" is high. The authors refer to "B - I" diagrams given in an earlier paper (Ref 8). These give the necessary functions for determining the "energy mass" more conveniently than the conventional entropy diagrams. There are 5 figures and 9 references, 6 of which are Soviet, 2 English, 1 German.

SUBMITTED: December 17, 1956

Card 5/5

AUTHOR: Ishkin, I. P., Professor, Doctor of Technical Sciences SOV/67-11-5-14/18

TITLE: On the Causes of Explosions in the Lower Columns of Oxygen Apparatuses (O prichinakh vzryvov v nizhnikh kolonnakh kislorodnykh apparatov)

PERIODICAL: Kislorod, 1958, Vol 11, Nr 5, pp 65 -- 68 (USSR)

ABSTRACT: Comrade Zheltov asks in a letter to inform him about the causes of explosions in the lower columns of plants for oxygen liquefaction. The author answers as follows: The directions for the prevention of explosions are insufficiently complied with. Evaporation of the liquid air in the lower columns during the standstill. The liquid not being allowed to flow away, if more than 0.4 cm³ acetylene are observed. A larger amount of acetylene in the air of the working place. The presence of acetylene in oxygen is especially dangerous because the latter readily ignites with acetylene. Acetylene in liquid air and liquid nitrogen is less dangerous. There are 3

Card 1/2

25(5)

AUTHORS:

Ishkin, I. P., Professor, Doctor of
Technical Sciences, Katina, N. F., Engineer

SOV/67-59-2-7/18

TITLE:

Adsorptive Purification of Air From Acetylene and Carbon Dioxide in Plants for Gaseous and Liquid Commercial Oxygen
(Adsorptsionnaya ochistka vozdukha ot atsetilena i dvukisi ugleroda na ustanovkakh tekhnicheskogo gazoobraznogo i zhidkogo kisloroda)

PERIODICAL:

Kislorod, 1959, ¹²Nr 2, pp 37-38 (USSR)

ABSTRACT:

Various methods have hitherto been devised whereby air used for engines driven by compressed gas is purified from acetylene by adsorption (Ref 1); further, experiments were made concerning the purification of air from acetylene and carbon dioxide at low temperatures (Ref 2). In this experiment the authors investigated the possibility of purifying air simultaneously from acetylene and carbon dioxide by way of adsorption. For this purpose, the process of adsorbing acetylene, carbon dioxide, and simultaneously a mixture of both at low temperatures and high pressure, both under dynamic and static conditions, was investigated in the VNI IKIMASH (All-Union Scientific Research Institute for the Construction of

Card 1/2

Adsorptive Purification of Air From Acetylene and SOV/67-59-2-7/18
Carbon Dioxide in Plants for Gaseous and Liquid Commercial Oxygen

Oxygen Plants). The capacity of various commercial adsorbents for CO₂ was investigated. From among the used adsorbents the active carbon AG-2 and the crumbly silica gel KSM exhibited the strongest adsorptive power. Besides, the authors investigated the conditions of desorption from the adsorbents. As a result, virtually the whole quantity of acetylene and carbon dioxide was adsorbed at temperatures of between -100 and -160° and at high pressure. The data obtained served the purpose of designing commercial adsorbers for oxygen plants. There are 6 references, 2 of which are Soviet.

Card 2/2

5(4)

AUTHORS:

Filippova, G. P., Engineer, SOV/67-59-2-8/18
Ishkin, I. P., Professor, Doctor of Technical Sciences

TITLE:

Viscosity of Air and Argon at Temperatures of Between 0 and -183° C and Pressures of Between 1-150 Atmospheres Absolute Pressure (Vyazkost' vozdukha i argona pri temperaturakh ot 0 do -183° C i davleniyakh ot 1 do 150 ata)

PERIODICAL:

Kislород, 1959, ¹⁷Nr 2, p 38 (USSR)

ABSTRACT:

There are no data available in publications on the viscosity of the afore-mentioned gases at pressure and low temperatures, already indicated by other authors (Refs 3,4,5). In order to fill this gap, the Physico-technical Laboratory of the VNIIMASH devised a method for determining the viscosity of compressed gases at low temperatures. This method is a new variant of the flow method. Accordingly, the gas passes through two capillary tubes, a determinant and a comparative capillary. In the latter atmospheric pressure and room temperature prevail. The desired viscosity is proportional to the ratio of pressure drop in both capillary tubes. A table

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- Viscosity of Air and Argon at Temperatures of Between SOV/67-59-2-8/18
0 and -183° C and Pressures of Between 1-150 Atmospheres Absolute Pressure

contains data on the dynamic viscosity of the air and argon
at low temperatures in dependence of pressure. There are 1
table and 5 references, 3 of which are Soviet.

Card 2/2

89930

S/170/61/004/003/009/013
B117/B209

26.1160

AUTHORS:

Filippova, G. P., Ishkin, I. P.

TITLE:

Viscosity of air, nitrogen, and argon at low temperatures and pressures of up to 150 atm

PERIODICAL:

Inzhenerno-fizicheskiy zhurnal, v. 4, no. 3, 1961, 105-109

TEXT: The authors employed a new standard method of determining the viscosity of gases at temperatures from $+20^{\circ}$ to -196°C and at pressures of up to 150 atm. The method is based on the principle that the gas flows through two capillary tubes. Through one of the capillaries, the gas flows at a preset pressure and temperature; through the other tube, i. e., the standard capillary, it streams at nearly atmospheric pressure and room temperature. When the masses of gas streaming through both capillaries are adjusted to be equal, one can derive a formula for calculating the kinematic viscosity: $\nu_1 = F\nu_2\Delta p_1/\Delta p_2$, where ν_1 denotes the kinematic viscosity of the gas in the test tube, F the constant of the arrangement, ν_2 the kinematic viscosity of the gas in the standard tube; Δp_1 and Δp_2 are the pressure gradients in the

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89930

S/170/61/004/003/009/013
B117/B209

Viscosity of air ...

capillaries. As the determination of F requires much time, a much simpler relative method is used for this purpose. In this case, F is found on the basis of gauge tests when the viscosity of the gas in the test tube is known. The maximum error in the determination of the kinematic viscosity coefficient amounts to 3%. The accuracy of the results may be improved by repeated experiments. Interpolated viscosity curves supply values with an accuracy of up to 1-1.5%. The authors determined the viscosity of water, nitrogen, and argon between 0° and -183°C and at pressures of up to 150 atm; the viscosity of hydrogen was determined at -100°C . A comparison between the values obtained and those of other authors shows good agreement. The maximum deviation is 1.5%. The values of the kinematic viscosity were calculated by averaging over several (2 - 13) experiments in the case of maximum pressure fluctuations of ± 1 atm. The dynamic viscosity was ascertained from a transformation of kinematic viscosity. The density of air, nitrogen, and argon was calculated from their compressibility. The isobaric lines were continued until 50°C according to data of I. F. Golubev (Fig. 1). The entire character of the family of curves corresponds to that of other substances near the critical point. The authors thank I. F. Golubev for valu-

Card 2/3

FILIPPOVA, G.P.; ISHKIN, I.P.

Viscosity of compressed nitrogen and argon. Izv.vys.ucheb.zav;
(MIRA 14:11)
khim.i khim.tekh. 4 no.5:863-865 '61.

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut, kafedra mashin
i oborudovaniya khimicheskikh proizvodstv. (Gases, Compressed)
(Nitrogen) (Argon)

275h8
S/170/61/004/010/002/019
B109/B125

5.1210

AUTHORS: Filippova, G. P., Ishkin, I. P.

TITLE: Calculation of the viscosity of compressed gases by means of the similarity method

PERIODICAL: Inzhenerno-fizicheskii zhurnal, v. 4, no. 10, 1961, 9 - 14

TEXT: The methods used so far in approximatively calculating the viscosity of compressed gases are not satisfactory. The authors present a new technique of calculating the viscosity of compressed gases from critical temperature and pressure. Density must be known. The essence of this very accurate method is the proper choice of the dimensionless quantities

$\sigma = \rho^{4/3} T_{cr}^{7/6} / \Delta \eta p_{cr}^{2/3} M^{5/6}$ and $\omega = \rho T_{cr} / p_{cr} M$. ρ denotes the density, T_{cr} - the critical temperature, η - the viscosity, $\Delta \eta = \eta_{T_{cr}} - \eta_T \cdot p_{cr}$

is the critical pressure, M - the molecular weight. L. P. Filippov (Dissertatsiya, MGU, 1951) and A. S. Predvoditelev (Sbornik, posvyashchenny P. P. Lazarevu, 1956, str. 84 - 112) interrelated the above dimensionless

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27548
S/170/61/004/010/002/019
B109/B125

Calculation of the viscosity of ...

quantities through the equation $\sigma = \alpha - \beta \omega$, where the dimensionless quantities α and β are identical for similar substances. The authors found the same relation $\sigma = 5.33 - 0.0387 \omega$ (7) for N_2 , O_2 , CO , CO_2 , CH_4 , C_2H_4 , C_2H_6 , and C_3H_8 . Consequently, this relation can be used for calculating the viscosity of a compressed gas in a wide temperature and pressure range. Only critical temperature and critical pressure must be known. The accuracy of formula (7) was checked with CO_2 . It proved to be

positively superior to the methods of Euskog, Shirokov, Panchenkov, Stolyarov, and Golubev (Table 1). Because of the great significance of this method in engineering, the dynamic viscosity of oxygen was calculated for the temperature range between 200 and $-100^\circ C$ at pressures of up to 400 atm. The known quantities were $T_{cr} = 154.8^\circ K$ and $P_{cr} = 51.7$ atm. The

results are shown in Fig. 3. O. I. Leypunskiy (Sb. trudov po tekhnicheskoy fizike, 1948, str. 31) and M. G. Gonikberg (ZhFKh, 2, 7, 1947) are mentioned. There are 3 figures, 1 table, and 17 references: 13 Soviet and 4 non-Soviet. The three most recent references to English-language publications read as follows: Uyehara O. A., Watson K. M. Nat. Petroleum News, 36, 764, 1944.

Card 2/5

27548

S/170/61/004/010/002/019
B109/B125

Calculation of the viscosity of ...

Pitzer K. S., Journ. of the American Chemical Society, 77, July 16, No. 13, 1955. Grunberg L. Ind. Eng. Chem., 42, 5, 885, 1950.

ASSOCIATION: Vsesoyuznyy zaachnyy politekhnicheskii institut, g. Moskva
(All-Union Correspondence Polytechnic Institute, Moscow)

SUBMITTED: April 17, 1961

Table 1. Change in the viscosity of CO₂ at 100°C with pressure. Legend:
(1) P, atm, (2) experimental $\eta \cdot 10^7$ g/cm·sec, (3) from the formula by
Enskog, Shirokov, Panchenkova, Stolyarov, Golubev.

Card 3/5

5.115
17.1153

31471
S/080/61/034/012/005/017
D243/D305

AUTHORS: Ishkin, I.P., and Katina, N.F.

TITLE: Statics of the absolute adsorption of carbon dioxide from mixtures with nitrogen at atmospheric pressure (1st report of a series of papers on the adsorption of carbon dioxide from air at low temperatures)

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 12, 1961, 2623 - 2627

TEXT: The present series of papers was devoted to the study of the properties of industrial adsorbents during the removal of carbon dioxide from air mixtures, at a concentration of 300 cm³ CO₂ per 1 m³ of air, at low temperatures, high and low pressures, and in static and dynamic conditions. The authors state that, hitherto, investigations in this field had only been carried out above -86°C and in static conditions. Data for the isotherms were obtained by the dynamic method. In preliminary tests the static capacity of the following adsorbents was determined at -110°C and CO₂ concentration of from 0 to 300 cm³/m³; АГ-2 (AG-2) activated carbon, KCM (KSM)

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31471
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D243/D305

Statics of the absolute ...

and KCK (KSK) silica gel, activated alumina, and three ultraporous silica gels - CY (SU), C200 (S200) or No. 6 granulated silica gel, and C204 (S204). These tests showed that KSM lump silica gel and S200 ultraporous silica gel were the best adsorbents. The isotherms of absolute adsorption for these two and activated alumina were plotted at temperatures of -78.5° to -140°C and concentrations of $0-2400\text{ cm}^3/\text{m}^3$. The main physical features of the three adsorbents are given. [Abstractor's note: No details of the other adsorbents listed are given]. Data obtained showed that the absolute static capacity of the adsorbents increased considerably with temperature fall. S200 silica gel had the greatest adsorption capacity being approximately 1.5 times that of KSM silica gel. Activated alumina had the lowest capacity, but may find use in adsorbers because of its greater stability. Identical mixtures gave different shaped isotherms showing the importance of adsorbent structure for the adsorption process: The curves only approximated to the single substance curves of Langmuir and Freundlich, despite the very low carbon dioxide content. The increase of the adsorption of KSM silica gel with concentrations greater than 0.0021 molar parts of CO_2 only

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S/080/61/034/012/005/017
D243/D305

Statics of the absolute ...

holds at atmospheric pressure and not for mixtures compressed to more than 7 atmospheres. There are 2 figures, 1 table and 13 references: 8 Soviet-bloc and 5 non-Soviet-bloc. The reference to the English-language publication reads as follows: S. Brunauer, P. Emmett, J. Am. Chem. Soc., 59, 2682, 1937.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut kislородного mashinostroyeniya (All Union Scientific Research Institute of Oxygen Machine Construction)

SUBMITTED: August 4, 1960

Card 3/3

5.115
17.1153

31172
S/080/61/034/012/006/017
D243/D305

AUTHORS: Ishkin, I.P., and Katina, N.F.

TITLE: Statics of the differential adsorption of carbon dioxide from air at high pressures (2nd of a series of reports on the adsorption of carbon dioxide at low temperatures)

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 12, 1961, 2628 - 2633

TEXT: The static capacity of adsorbents at high pressures was found by absorption of carbon dioxide from compressed air, containing 0.0003 molar parts of CO₂. Measurements were taken on an apparatus described by Ishkin and Katina (Ref. 1: Zh.P.Kh. XXXIV, 12, 2623, 1961) modified to deal with air under pressure. Compressed air passed slowly through the adsorber the pressure in the latter being controlled by high pressure microvalves placed in the air current before and after the adsorber; two microvalves, placed in series in front of the adsorber ensured accurate control of the air

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Statics of the differential ...

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supply. On completion of adsorption the pressure was brought to atmospheric and desorption proceeded in the normal way, beginning at -80°C . The differential adsorption capacity for KCM (KSM), No. 6 and KCK (KSK) silica gels and activated alumina were determined at -120°C and in the pressure range 1-140 atm. KSM and No. 6 silica gel had the greatest static capacity and the differential adsorption isotherms for the substances were plotted. It was found that adsorbent capacity rises initially to a maximum between 15-25 atm. then slowly declines. The position of the maximum depends on the ratio of carbon dioxide concentration in the gaseous phase to its uniform concentration. Above 125 atm. the adsorption capacity remains constant and independent of pressure. The plotted isotherms satisfy von Antropoff's equation (Ref. 2: Koll. Z., 98, 249, (1942); 99, 35, 1942). It was found that data on the absolute absorption of CO_2 at atm. pressure agree with those for the adsorption of CO_2 at partial pressures of up to 0.0021 atm. There are 2 tables, 5 figures and 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc. The reference to the English-language publication reads as follows: T. Y. Webster (Iz materialov VIII Mezhdunarodnogo kongressa po khologo-
Card 2/3

Statics of the differential ...

311472
S/080/61/034/012/006/017
D243/D305

dil'nomu delu -Data from the 8th International Congress on Refrigeration) 25) The Effect of Indifferent Gases on the Vapor Pressure of Carbon-Dioxide.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut kislorodnogo mashinostroyeniya (All Union Scientific Research Institute of Oxygen Machine Construction)

SUBMITTED: August 4, 1960

Card 3/3

4

ISHKIN, I.P.; KATINA, N.F.

Dynamics of carbon dioxide adsorption from mixtures at atmospheric
and low pressures. Zhur.prikl.khim. 35 no.1:104-111 Ja '62.
(MIRA 15:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kislородnogo
mashinostroyeniya.

(Carbon dioxide) (Adsorption)

BRODYANSKIY, V.M.; ISHKIN, I.P.

Thermodynamic analysis of processes of the liquefaction of gases.
Inzh.-fiz.zhur. 6 no.10:19-26 0'63. (MIRA 16:11)

1. Energeticheskiy institut, Moskva.

L 16334-65 EWG(j)/EWP(e)/EWT(m)/EPF(c)/EPR/ENP(t)/ENF(b) Pq-4/Pr-4/Ps-4
IJP(c)/RPL JD/JW/JW/WH

ACCESSION NR: AP4049178

S/0314/64/000/005/0025/0026

AUTHOR: Rogovaya, I.A., (Candidate of technical sciences), Ishkin, I.P., (Doctor of technical sciences, Professor) 3

TITLE: Thermophysical properties of rock packing under the operating conditions of air fractionating apparatus regenerators

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 5, 1964, 25-26

TOPIC TAGS: air fractionation apparatus, regenerator rock packing, regenerator aluminum packing, packing thermophysical property, oxygen production, nitrogen production, air fractionation

ABSTRACT: It is now possible to obtain technically pure ²⁷oxygen (99.2-99.5%) and ²⁷nitrogen (99.95-99.998%) in units with regenerators having rock packing and heat exchangers instead of the previously used aluminum band packing. The present paper discusses the results of a study of the thermal and hydrodynamic properties of rocks, as well as melted basalt, and makes some recommendations for their application in apparatus packings. The tests were made with natural crushed rock which had been passed through ball mill. The hydrodynamic properties were tested only in the case of smooth molten

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Card

L 16334-65

ACCESSION NR: AP4049178

basalt, but the thermal conductivity and heat capacity were determined for basalt, quartz, quartzite and granite. The equivalent pore diameter served for evaluating the hydraulic resistance. The packing grain surface per unit volume of filled space was taken to be directly proportional to the free volume and inversely proportional to the equivalent pore diameter. The thermal conductivity was determined in a calorimeter with liquid oxygen. The quantity of oxygen evaporated in the calorimeter due to heat flow through the sample was measured by a rheometer and the temperature of the outer surface was measured by a thermocouple. The thermal conductivity of the packing was determined by pouring the crushed rock between two concentric copper spheres. The quantity of heat passing through the rock was then calculated from the power of the heater. The heat capacity was tested by cooling a sample of material in a thermostat to a certain temperature, then placing the rock in a copper calorimeter having a certain temperature. The calorimeter temperature dropped and the heat capacity was calculated from the quantity of heat passing from the calorimeter to the sample. Comparison of the data obtained indicated that the thermal conductivity of a solid lump is 10 times higher than for crushed stone. Quartzite has the highest heat capacity, being the best packing for this reason, but the quarried quartzite is not as good as basalt and cannot be used in large regenerators.

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L 16334-65

ACCESSION NR: AP4049178

S/0314/64/000/000/0025/0026

Tests showed that replacement of corrugated aluminum packing by rock increases the regenerator cross section and lowers the air velocity. Decreasing the transfer time also lowers air losses from 3.5 to 1.3% and increases oxygen delivery from 96 to 98%. Lowering the air velocity leads to a content of only 5-7 p.p.m. of carbon dioxide. Checking the coefficient of application of the rock packing of the BR-1 appliance shows that increasing the transfer time 4-7 fold leads to negligible temperature gradients in the rock grain. Orig. art. has: 5 tables and 2 equations.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: IE, *ac*

NO REF SOV: 005

OTHER: 004

Card 3/3

ISHKIN, I.F.; DUBIL', Ye.S.

Hydrodynamics of granular materials for soda production in a
fluidized bed. Zhur. prikl. khim. 38 no.1:107-114 Ja '65.
(MIRA 18:3)

ISHKIN, A. Z.

BOGOYAVLENSKIY, A.F.; ISHKIN, A.Z.

Investigating the anodic passivation of aluminum alloys. Trudy
KAI 31 '56. (MLRA 10:5)
(Aluminum alloys--Electrometallurgy)

CHIRKIN, O., inzh.; KUZ'MIN, V.; BORISOV, L.; ISHKIN, V.; SEREBRYANNIKOV, G.

Information. Avt.transp. 42 no.12:52-54 D '64.

(MIRA 18:4)

28446

11.0132

S/153/61/004/004/011/013
E141/E135

AUTHORS: Sokolova, Ye.B., Shebanova, M.P., and Ishkina, V.I.

TITLE: Alkylation of toluene with crude isooctene

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
khimicheskaya tekhnologiya, vol.4, no.4, 1961, 657-660

TEXT: The authors attempted to synthesize the n-dialkyl-substituted $C_{15}H_{30}$ cyclohexane, a possible component of hydrocarbon fuels. Toluene and isooctene were used as starting materials. 2,4,4-trimethylpentene-1 and 2,4,4-trimethylpentene-2, the isomeric forms of the isobutylene dimer (Ref.1; A.D. Petrov, Khimiya motornogo topliva (Chemistry of motor fuel) Izd. AN SSSR, 1953, p.101) were obtained from crude isooctene by threefold distillation. Crude isooctene contains a considerable fraction (5 weight %) which boils at a temperature up to 101 °C; this fraction was distilled on a 1100 mm high column. The fraction boiling between 99 and 102 °C (constituting about 7 weight %) was also used as alkylating agent. The alkylation reaction was carried out according to the Friedel-Crafts reaction, in the presence of $AlCl_3$, under reaction conditions as described by Sanford

Card 1/2

✓

1. A. K. ISKNELI
2. USSR (600)
4. Barium Titanate
7. Dielectric properties of isomorphous mixtures of barium titanate. Soob. AN Gruz. SSR 11 no. 5. 1950.
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BUTOMA, B.Ye.; YEGOROV, M.Ye.; DEREVIANKO, Yu.G.; KHABAKHPASHEV, A.A.;
BAKAYEV, V.G.; ISHKOV, A.A.; KOLESNICHENKO, N.S.; KAMENTSEV, V.M.;
GORSHKOV, S.G.; KASATONOV, M.A.; ISHCHENKOV, N.V.; AFANAS'YEV, S.A.;
TITOV, G.A.; LARIONOV, M.F.

Boris Evgen'evich Klopotov; obituary. Sudostroenie 30
no.11:81 '64.

(MIRA 18:3)

ISHKOV, A.K.

Forecast of the water stage in the lower pool of the Gorkiy
Hydroelectric Power Station by means of a modeling device.
Trudy TSIP no.141:85-89 '65.

(MIRA 18:9)

ACC NR: AF7005707

SOURCE CODE: UR/0089/67/022/001/0003/0006

AUTHOR: Vorob'yev, A. A.; Didenko, A. N.; Ishkov, A. P.; Kolomenskiy, A. A.; Lebedev, A. N.; Yushkov, Yu. G.

ORG: none

TITLE: Investigation of autoresonant method of particle acceleration by electromagnetic waves

SOURCE: Atomnaya energiya, v. 22, no. 1, 1967, 3-6

TOPIC TAGS: particle acceleration, magnetic resonance, ^{ACCELERATION} electron waveguide, electron accelerator, ~~ELECTROMAGNETIC WAVE~~

ABSTRACT: This is a continuation of earlier work (in: Trudy Mezhdunarodnoy konferentsii po uskoritelyam [Trans. Internat. Conf. on Accelerators] (Dubna, 1965), M., Atomizdat, 1964, p. 1030, and earlier papers) which demonstrated the feasibility of resonant acceleration of particles by a transverse wave in a longitudinal magnetic field under suitable conditions. The present paper contains the results of an experimental investigation of this method of acceleration. In view of the limited possibility of obtaining the required strong field in a large volume, the study is confined to acceleration by 10-cm electromagnetic waves inside a straight smooth waveguide (H_{11} and H_{10} modes). Equations are derived for the angular velocity and phase of a particle accelerated in such a structure, and for the length of the waveguide over which the particle energy will increase. The accelerating system was a

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UDC: 621.384.62

ACC NR: AP7005707

rectangular waveguide (72 x 44 mm) for the H_{10} mode or a 76-mm diameter round waveguide for the H_{11} mode. The length of the waveguide ranged from 150 to 1000 mm. Pulsed microwave power (not more than 600 kw) (3000 MHz) was fed in 3- μ sec pulses at a repetition frequency of 50 Hz. The 1000-oe dc field was produced with a solenoid. The particle energy was determined from the deceleration produced by aluminum foils and reached 700 kev, at an electric field intensity of 3—5 kv/cm, which is higher than obtainable by ordinary cyclotron acceleration. The ancillary tests made on the equipment are briefly described. The experimental data agree with the earlier theoretical predictions and it is concluded that the autoresonant mechanism can be used for effective injection of particles into magnetic traps. Orig. art. has: 1 figure and 9 formulas. [02]

SUB CODE: 20/ SUBM DATE: 05Sep66/ ORIG REF: 006/ ATD PRESS: 5117

Card 2/2

ARKHANGORODSKIY, L.A.; BUKSHTEYN, Ya.A.; VOROB'YEV, S.V.; GAYENKO, P.A.; DOLGOV, Ye.N.; ZHIGLIN, A.A.; ZUBOVSKIY, G.P.; ISHKOV, I.G.; KRYZHANOVSKAYA, G.L.; LISTRATOV, A.A.; LUR'YE, R.I.; MOROZOV, N.P.; OSTROZETSER, A.S.; PAVLOV, N.A.; PETROV, L.M.; POPOV, V.N.; TARTAKOVSKIY, M.A.; TAUBE, D.N.; KHANIN, L.T.; SHAPIRO, TS.S.; SHVITSBURG, B.A.; SHEVTSOV, V.D.; DENISENKOVA, L.M., red.

[Assembler's handbook on performing mechanical assembly and special work on grain elevators and grain processing enterprises] Spravochnik montazhnika; po proizvodstvu mekhanomontazhnykh i spetsial'nykh rabot na elevatorakh i predpriyatiyakh po pererabotke zerna. Moskva, TSentr. in-t nauchno-tekhn. informatsii i tekhniko-ekon. issl., 1963. 519 p. (MIRA 17:7)

ISHKOV, M.

An engineer is in constant search for progress. Mest.prom.i khud.
promys. 2 no.8:16-17 Ag '61. (MIRA 14:9)

1. Glavnyy inzhener oblmestproma, Grodno, Belorusskoy SSR.
(Industrial management)

ISHKOV, P. K. [deceased]

Occurrence of elastic waves in a stratum lying on an elastic
foundation. Izv. AN SSSR. Ser. geofiz. no. 2: 124-133 F '56.
(Waves) (MIRA 9:7)

1-54 KOTA, P. O.
Ishikawa, A. O. Exact solution of the problem of bending
of a thin plate supported by an elastic half-space and
subjected to a load which is symmetrical uniformly distributed
load.

The author obtains an exact solution of the problem of bending
of a thin plate supported by an elastic half-space and
subjected to a load which is symmetrical uniformly distributed
load. The author also establishes the convergence of the development
of the solution in terms of the parameter λ . The author concludes that the
method of the asymptotic expansion of the solution is applicable to the
problem of bending of a thin plate supported by an elastic half-space and
subjected to a load which is symmetrical uniformly distributed load.

Source: Mathematical Reviews. 1972, Vol 9, no. 2

Mathematical Reviews
Vol. 14 No. 7
July - August, 1953
Mechanics.

Iskova, A. G.: Bending of a circular plate lying on an elastic half-space under the action of an axially symmetrical uniformly distributed load. Moskov. Gos. Univ. Uchenye Zapiski 152, Mehanika 3, 202-225 (1951). (Russian).

The fourth order differential equation for the deflection of the plate with free edges described in the title, which was given by Lagrange and S. Germain, and the integral equation for the sag of the foundation which was given by Boussinesq and Schleicher, together with the boundary conditions contain the solution of the problem. The unknown reaction of the foundation present in both equations makes it very difficult to find the exact solution. The problem was tackled before by Borovik and Gorbunov-Pozadov (references not given). They assumed the reaction to be a power series in radius vector r , and the problem was reduced to an infinite system of equations determining the coefficients of the series. The system was not solved, but the first few coefficients were approximately determined.

The author of this paper assumes also that the reaction is a power series in r but of a very special form. She also obtains the infinite system of equations in coefficients of the series and manages very ingeniously to solve it. The solutions, i.e., the coefficients, are infinite series themselves. The solutions are checked and the series representing the reaction is tested for convergence. T. Lenz.

ISHKOVA, A. G., and TULAYKOV, A. N.

"Some Problems on the Flexure of Plates Lying on an Elastic Semispace," by A. G. Ishkova and A. N. Tulaykov, Moscow, Inzhenernyy Sbornik, Vol 23, 1956, pp 47-62, submitted for publication 12 Jun 54

This work studies problems of the flexure of an infinite strip under the conditions of a plane problem and a circular plate with different loadings, lying on ground assumed to be an elastic, isotropic, homogeneous semispace. Nonsymmetric and concentrated loads are not considered. The problem in question was boiled down to the determination of the reaction of the ground to the plate with the plate being in equilibrium under the action of external loads and reactive pressures and with the plate being in solid contact with the ground at every point.

Sum 1239

L. V. H. 100-
AUTHOR: Ishkova, A.G. (Moscow)

40-21-2-19/22

TITLE: Some Generalizations for the Solution of the Problems on the Deformation of a Round Plate and an Infinite Strip Which Lie on an Elastic Half Space (Nekotorye obobshcheniya, kasayushchiyesya resheniya zadach ob izgibe krugloy plastinki i beskonechnoy polosy, lezhashchikh na uprugom poluprostranstve)

PERIODICAL: Prikladnaya Matematika i Mekhanika, 1957, Vol 21, Nr 2, pp 287-290 (USSR)

ABSTRACT: The author considers the deformation of a round plate and a strip during the influence of a shunt loading (axiallysymmetrical one or not) and during a simultaneous shunt loading and compression (in the plane of the plate or of the strip). The solutions are sought in the form of infinite series. Several examples are calculated. Similar methods have been proposed by the author in an earlier paper [Ref 5]. There are 6 Soviet references.

SUBMITTED: November 5, 1956

AVAILABLE: Library of Congress

Card 1/1 1. Plates--Deformations--Theory

AUTHOR: Ishkova, A.G. (Moscow)

SOV/24-58-5-13/31

TITLE: Bending of a Circular Plate Located on an Elastic Semi-space under the Effect of a Load which is not Axis Symmetrical (Izgib krugloy plastinki, lezhashchey na uprugom poluprostranstve, pod deystviyem nekotorykh neosesimmetrichnoy nagruzki)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 5, pp 78-84 (USSR)

ABSTRACT: The bending is considered of a circular plate by a load which is not axis symmetrical and varies according to the law $q^* = q(\varphi) \cos n\varphi$, the plate being placed on the soil, which is assumed as being an isotropic, elastic, uniform semi-space. The problem under consideration is reduced to determining the reaction of the ground on the plate under conditions of the external load and the reaction pressures being in equilibrium and the plate adhering tightly to the ground at each point. For the same conditions the author of this paper solved some axis-symmetrical and plane problems in earlier work (Refs 1 and 2). It is assumed that $q(\varphi)$ can be developed into a power series which is convergent inside a circle.

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SOV/24-58-5-13/31
· Bending of a Circular Plate Located on an Elastic Semi-space
under the Effect of a Load which is not Axis Symmetrical

Relations are derived, the use of which is illustrated
by means of an example.

There are 1 table and 5 references, 4 of which are
Soviet, 1 German.

SUBMITTED: September 26, 1957

Card 2/2

AUTHOR: Ishkova, A.G.

SOV/140-58-6-10/27

TITLE: The Problem of Bending of a Round Plate Resting on an Elastic Half Space, Under the Influence of a Single Force Acting in the Center (Zadacha ob izgibe krugloy plastinki, lezhashchey na uprugom poluprostranstve, pod deystviyem sosredotochennoy sily, prilozhennoy v yeye tsentre)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1958, Nr 6, pp 96-104 (USSR)

ABSTRACT: The author considers the bending of a round plate of radius 1, resting on an elastic base which is charged by a single force in the center. The unknown radius force of the base is sought in the form

$$p(s) = \frac{A}{\sqrt{1-s^2}} + \sum_{n=0}^{\infty} b_n s^n + \sum_{n=0}^{\infty} E_{2n} s^{2n} \ln s.$$

By separation of the singularity $(1-s^2)^{-1/2}$ the author succeeds in obtaining a rigorously solvable infinite system of equations for the determination of the coefficients. The solutions are compared with formerly obtained approximate solutions; there are relatively small differences.

There are 6 references, 4 of which are Soviet, and 2 German.

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The Problem of Bending of a Round Plate Resting on an Elastic Half Space, Under the Influence of a Single Force Acting in the Center SOV/140-58-6-10/27

ASSOCIATION: Moskovskiy aviatsionnyy institut imeni Ordzhonikidze
(Moscow Aviation Institute imeni Ordzhonikidze)

SUBMITTED: October 24, 1957

Card 2/2

SOV/24-58-10-13/34

AUTHOR: Ishkova, A. G. (Moscow)

TITLE: On the Bending of a Circular Plate and Infinite Strip Lying on an Elastic Half-Space (Ob izgibe krugloy plastinki i beskonechnoy polosy, lezhashchikh na uprugom poluprostranstve)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye tekhnicheskikh nauk, 1958, Nr 10, pp 87-91 (USSR)

ABSTRACT: Solutions of problems on the bending of a circular plate and of an infinite strip placed on an elastic half-space and loaded in various ways may lead to the solution of some infinite systems of equations with infinite numbers of unknowns. In each problem one must find unknown coefficients $\alpha_{\mu n}$ which satisfy the following infinite family of infinite systems of equations:

$$\sum_{n=0}^{\infty} \frac{\alpha_{\mu n}}{2n - 2m - 1} = \beta_{\mu m} \quad \left(\begin{array}{l} \mu = 1, 2, \dots \\ m = 0, 1, \dots \end{array} \right) \quad (1)$$

The solution of such systems may be represented in the form:
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SOV/24-58-10-13/34

On the Bending of a Circular Plate and Infinite Strip Lying on an Elastic Half-Space

$$\alpha_{\mu n} = \frac{2}{\pi} \frac{(2n-1)!!}{(2n)!!} \sum_{s=0}^{\infty} \frac{(2s+1)!! \beta_{\mu s}}{(2s)!! (2n-2s-1)} \quad (2)$$

The fact that Eq.(2) is a solution of Eq.(1) may be verified by a simple substitution as was shown by the present author in Ref.1. In the present paper it is shown how this solution was found. There are no figures; 4 Soviet references by the present author.

SUBMITTED: November 27, 1957.

Card 2/2

Duk

ISHKOVA, A.G., Doc Phys-Math Sci -- (disc) "Curve of ^{an infinite band} ~~an infinite band~~
and ^{circular plate} ~~an infinite band~~ lying on an elastic semispace." Mos, 1959. 12 pp
(Acad of Sci USSR. Inst of Mechanics), 150 copies. Bibliography:
pp 11-12 (20 titles) (KL, 29-59, 125)

- 1 -

ISHKOVA, A.G. (Moskva)

Bending of a strip and a circular plate supported by an elastic
semispace. Inzh.sbor. 28:171-181 '60. (MIRA 13:10)
(Elastic plates and shells)

ISHKOVA, A.G.

Flexure of a circular plate lying on an elastic half-space under the action of a concentrated force and longitudinal forces. Izv. vys.ucheb. zav.; mat. no.3:37-47 '62. (MIRA 15:9)

1. Moskovskiy aviatsionnyy institut imeni Ordzhonikidze.
(Elastic plates and shells)

ISHKOVA, A.G. (Moskva)

Bending of a strip and a circular plate on a composite support.
Inzh.zhur. 2 no.2:270-279 '62. (MIRA 15:6)
(Elastic plates and shells)

ISHKOVA, A.G.; KORENEV, B.G. (Moscow)

"The bending of plates on an elastic and elastic-plastic foundation"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

RYAUZOV, N.N., prof.; ISHKOVA, A.K., red.; SUDAK, D.M., tekhn. red.

[Statistics of Soviet commerce] Statistika sovetskoi trgovli.
Moskva, Gostorgizdat, 1948. 117 p. (MIRA 14:8)
(Russia—Commerce)

PROSTYAKOV, V.I.; ISHKOVA, A.K., redaktor.

[Construction materials trade] Torgovlia stroitel'nymi materialami. Izd. 2-e, dop. Moskva, Gos. trgovoe izd-vo, 1953. 82 p.
(Building materials--Marketing) (MLRA 7:8)

KUL'CHITSKIY, V.S.; ORLOV, G.N.; CHERNOIVANNIK, A.Ya.; ISHKOVA, A.X.,
redaktor; SUDAK, D.M., tekhnicheskiy redaktor

[A catalog of commercial and technical equipment] Spravochnik-
katalog trgovogo i tekhnologicheskogo oborudovaniia. Izd. 2-e.
Moskva, Gos. izd-vo trgovoi lit-ry, 1954. 139 p. (MLRA 8:4)
(Food industry--Equipment and supplies)
(Retail trade--Equipment and supplies)

KOCHETOV, Nikolay Dmitriyevich; ISHKOVA, A.K., redaktor; ROSLOV, G.I.,
tekhnicheskii redaktor.

[Refrigeration engineering for commercial enterprises and general
food stores] Kholezil'naya tekhnika v predpriyatiyakh torgovli i
obshchestvennogo pitaniya. Moskva, Gos.izd-vo torgevoi lit-ry,
1955. 227 p. (MLRA 9:5)
(Refrigeration and refrigerating machinery)

15 #11-VA A.K.
DADUGIN, Aleksandr Prokhorovich; FEDOROV, Petr Nikolayevich; ISHKOVA, A.K.,
red.

[Organizing the marketing of collective farm produce] Organizatsiia
kolkhoznoi rynochnoi trgovli. Moskva, Gos. izd-vo torg. lit-ry.
1957. 150 p. (MIRA 11:5)
(Farm produce--Marketing)

ZAVILOVICH, Mikhail Avraamovich, ISHKOVA, A.K., red.; SUDAK, D.M., tekhn. red

[Principles for the methodology of planning the national economy;
lectures in a course on "Planning the national economy."] Osnovy
metodologii planirovaniia narodnogo khoziaistva; lektsii po kursu
"Planirovanie narodnogo khoziaistva." Moskva, Gos. izd-vo tog.
lit-ry, 1958. 105 p. (MIRA 11:12)

(Economics)

MOSKOVA, Glafira Leonidovna; PERK, Georgiy Yul'yevich; ISHKOVA, A.K.,
red.; BABICHEVA, V.V., tekhn.red.

[Microbial food spoilage of perishable food products in storage;
a scientific report] Mikrobial'naya porcha skoroprotivoshchikhsia
pishchevykh produktov pri khraneni; nauchnoe soobshchenie. Moskva,
Gos.izd-vo torg.lit-ry, 1959. 62 p. (MIRA 13:4)
(Food spoilage)

STATSENKO, G.L.; ISHKOVA, A.K., red.; BABICHEVA, V.V., tekhn.red.

[Industrial hygiene and safety measures in the organizations
and enterprises of commerce and public food service] Okhrana
truda i tekhnika bezopasnosti v organizatsiakh i predpriyatiakh
torgovli i obshchestvennogo pitaniya. Moskva, Gos.izd-vo torg.
lit-ry, 1959. 247 p. (MIRA 13:4)

(Russia--Commerce)

(Industrial hygiene--Law and legislation)

BAKHVALOV, A.P.; SHRAGO, Z.Kh.; ZHITOMIRSKAYA, L.M.; ISKOVA, A.K.,
red.; MAMONTOVA, N.N., tekhn.red.

[Coin mechanisms of vending machines] Monetnye mekhanizmy
torgovykh avtomatov. Moskva, Gos.izd-vo tog.lit-ry, 1960.
79 p. (MIRA 13:12)

(Vending machines)

FOMIN, G.Ya.; VASENINA, N.I., red.; ISHKOVA, A.K., red.; EL'KINA, E.M.,
tekhn. red.; GROMOV, A.S., tekhn. red.

[Work and wages in state commerce] Trud i zarabotnaia plata v gosudarstvennoi torgovle; sbornik rukovodiashchikh materialov. Izd.2.,
perer. Pod red. N.I.Vasenina. Moskva, Gos. izd-vo torg. lit-ry,
1961. 335 p. (MIRA 14:11)

(Wages—Commerce)

Fizika, 1957

AUTHORS: Ivanov, S.I., Shalinets, B.A., Myshlyayev, A.M. 47-6-36/37

TITLE: A Conference on the Method of Teaching Physics (Konferentsiya po metodike fiziki)

PERIODICAL: Fizika v Shkole, 1957, # 6, page 93 (USSR)

ABSTRACT: A scientific conference on the method of teaching physics took place at the Moskva Oblast' Pedagogical Institute with teachers from the city of Moscow and the Moscow Oblast' and representatives of the Moscow, Stalingrad, Krasnodar, Mariyskiy [in Yoshkar-Ola], Kabardino-Balkarskiy, Tula, Yaroslavl, Shuya pedagogical institutes, the Institut of Psychology APN and the Kaluga Oblast' Institute for the Improvement of Teachers.

Berdichev, and

The following reports were heard and discussed: S.I. Ivanov - "The Methods of Methodical Researches", O.N. Lapina - "The Rise and Development of Concepts of Temperature and Quantity of Heat" (at the 7-class school), Ye.Kh. Lyatker - "The Rise and Development (at the pre-school age and the 7-class school) of Basic Concepts in the Field of Electricity", T. Ya. Ishkova - "The Rise and Development (during the pre-school age and at the 7-class school) of Concepts of Magnetism", A.V. Selenginskiy - "On the Development of

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GLADKIY, M.I. [deceased]; SHANIN, G.A.; IODKO, Ye.K.; MANAYENKOV,
S.D.; MIKHAYLOV, E.A.; GRIBOVA, Ye.N.; LUGOVSKIY, P.P.;
KULESHOV, S.M.; SHATOV, A.I.; SHNYREVA, N.N.; ISHKOVA,
V.M.; LYKOV, A.I.; TYULYAYEV, A.N., *otv. red.*; SIDOROVA,
T.S., *red.*; SHEFER, G.I., *tekhn. red.*

[Determining the economic efficiency of new machinery in the
communication system] *Opredelenie ekonomicheskoi effektivno-*
sti novoi tekhniki v khoziaistve svyazi; informatsionnyi sbor-
nik. Moskva, Svyaz'izdat, 1962. 174 p. (MIRA 16:3)
(Communication and traffic--Technological innovations)

NIKOLAYEV, Nikolay Grigor'yevich; ISHKOVA, Yevgeniya Vasil'yevna;
FISHCHEVA, T.V., red.; KORNEYEVA, V.I., tekhn. red.

[Local geography; teacher's manual] Kraevedenie; posobie dlia
uchitelia. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv.
RSFSR, 1961. 158 p. (MIRA 15:4)
(Geography—Study and teaching)

KUCHERENKO, M.T.; ISHKOVA, Ye.V.

Carbonate concretions from the Upper Visean coal formation in
Pavlograd and Novomoskovsk District. ~~Izv.vys.sobed.nauk.~~; geol.
i razv. 5 no.5:74-82 My '62. (MIRA 15:6)

1. Dnepropetrovskiy gosudarstvennyy universitet.
(Donets Basin--Coal geology)
(Donets Basin--Concretions)
(Carbonates)

ISHLINSKIY, A. Yu.

"Longitudinal Oscillations of a Bar When for the Relaxation and the Elastic
Post-Action the Linear Law is Adopted," Prik. mat. i mekh., 4, No.1, 1940